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02/04/99
15:25 U.S. PTO

Practitioner's Docket No. 8L05.1-011

PATENT

JC530 U.S. PTO
09/244715
02/04/99

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

NEW APPLICATION TRANSMITTAL

Transmitted herewith for filing is the patent application of
Inventor(s): LASTER, Maurice Scott

WARNING: 37 C.F.R. § 1.41(a)(1) points out:

"(a) A patent is applied for in the name or names of the actual inventor or inventors.

"(1) The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.63, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(i) is filed supplying or changing the name or names of the inventor or inventors."

For (title):

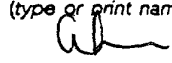
METHOD AND APPARATUS FOR REMOTE TELEPHONE CALL ORIGINATION

CERTIFICATION UNDER 37 C.F.R. 1.10*
(Express Mail label number is mandatory.)
(Express Mail certification is optional.)

I hereby certify that this New Application Transmittal and the documents referred to as attached therein are being deposited with the United States Postal Service on this date 4 February 1999, in an envelope as "Express Mail Post Office to Addressee," mailing Label Number EL004381375US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Alicia Howell

(type or print name of person mailing paper)



Signature of person mailing paper

WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.

***WARNING:** Each paper or fee filed by "Express Mail" **must** have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. 1.10(b).

"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will **not** be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

09244715-020499

1. Type of Application

This new application is for a(n)

(check one applicable item below)

- ☒ Original (nonprovisional)
☐ Design
☐ Plant

WARNING: Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

WARNING: Do not use this transmittal for the filing of a provisional application.

NOTE: If one of the following 3 items apply, then complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED and a NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION.

- ☐ Divisional.
☐ Continuation.
☒ Continuation-in-part (C-I-P).

2. Benefit of Prior U.S. Application(s) (35 U.S.C. 119(e), 120, or 121)

NOTE: A nonprovisional application may claim an invention disclosed in one or more prior filed copending nonprovisional applications or copending international applications designating the United States of America. In order for a nonprovisional application to claim the benefit of a prior filed copending nonprovisional application or copending international application designating the United States of America, each prior application must name as an inventor at least one inventor named in the later filed nonprovisional application and disclose the named inventor's invention claimed in at least one claim of the later filed nonprovisional application in the manner provided by the first paragraph of 35 U.S.C. 112. Each prior application must also be:

(i) An international application entitled to a filing date in accordance with PCT Article 11 and designating the United States of America; or

(ii) Complete as set forth in § 1.51(b); or

(iii) Entitled to a filing date as set forth in § 1.53(b) or § 1.53(d) and include the basic filing fee set forth in § 1.16; or

(iv) Entitled to a filing date as set forth in § 1.53(b) and have paid therein the processing and retention fee set forth in § 1.21(f) within the time period set forth in § 1.53(f).

37 C.F.R. § 1.78(a)(1).

NOTE: If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

WARNING: If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. 120, 121 or 365(c). (35 U.S.C. 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

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WARNING: When the last day of pendency of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, any nonprovisional application claiming benefit of the provisional application must be filed prior to the Saturday, Sunday, or Federal holiday within the District of Columbia. See 37 C.F.R. § 1.78(a)(3).

- ☒ The new application being transmitted claims the benefit of prior U.S. application(s). Enclosed are ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

3. Papers Enclosed

- A. Required for filing date under 37 C.F.R. § 1.53(b) (Regular) or 37 C.F.R. § 1.153 (Design) Application

13 Pages of specification

4 Pages of claims

5 Sheets of drawing

WARNING: DO NOT submit original drawings. A high quality copy of the drawings should be supplied when filing a patent application. The drawings that are submitted to the Office must be on strong, white, smooth, and non-shiny paper and meet the standards according to § 1.84. If corrections to the drawings are necessary, they should be made to the original drawing and a high-quality copy of the corrected original drawing then submitted to the Office. Only one copy is required or desired. For comments on proposed then-new 37 CFR 1.84, see Notice of March 9, 1988 (1990 O.G. 57-62).

NOTE: "Identifying indicia, if provided, should include the application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application. This information should be placed on the back of each sheet of drawing a minimum distance of 1.5 cm. (5/8 inch) down from the top of the page . . ." 37 C.F.R. 1.84(c)).

(complete the following, if applicable)

- ☐ The enclosed drawing(s) are photograph(s), and there is also attached a "PETITION TO ACCEPT PHOTOGRAPH(S) AS DRAWING(S)." 37 C.F.R. 1.84(b).
- ☐ formal
- ☒ informal

B. Other Papers Enclosed

2 Pages of declaration and power of attorney

1 Pages of abstract

 Other

4. Additional papers enclosed

- ☐ Amendment to claims
- ☐ Cancel in this applications claims _____ before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
- ☐ Add the claims shown on the attached amendment. (Claims added have been numbered consecutively following the highest numbered original claims.)
- ☐ Preliminary Amendment
- ☐ Information Disclosure Statement (37 C.F.R. 1.98)
- ☒ Form PTO-1449 (PTO/SB/08A and 08B)
- ☐ Citations

- ☐ Declaration of Biological Deposit
- ☐ Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.
- ☐ Authorization of Attorney(s) to Accept and Follow Instructions from Representative
- ☐ Special Comments
- ☐ Other

5. Declaration or oath (including power of attorney)

NOTE: A newly executed declaration is not required in a continuation or divisional application provided that the prior nonprovisional application contained a declaration as required, the application being filed is by all or fewer than all the inventors named in the prior application, there is no new matter in the application being filed, and a copy of the executed declaration filed in the prior application (showing the signature or an indication thereon that it was signed) is submitted. The copy must be accompanied by a statement requesting deletion of the names of person(s) who are not inventors of the application being filed. If the declaration in the prior application was filed under § 1.47, then a copy of that declaration must be filed accompanied by a copy of the decision granting § 1.47 status or, if a nonsigning person under § 1.47 has subsequently joined in a prior application, then a copy of the subsequently executed declaration must be filed. See 37 C.F.R. §§ 1.63(d)(1)–(3).

NOTE: A declaration filed to complete an application must be executed, identify the specification to which it is directed, identify each inventor by full name including family name and at least one given name, without abbreviation together with any other given name or initial, and the residence, post office address and country or citizenship of each inventor, and state whether the inventor is a sole or joint inventor. 37 C.F.R. § 1.63(a)(1)–(4).

- ☒ Enclosed
Executed by

(check all applicable boxes)

- ☒ inventor(s).
- ☐ legal representative of inventor(s).
37 CFR 1.42 or 1.43.
- ☐ joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.
- ☐ This is the petition required by 37 CFR 1.47 and the statement required by 37 CFR 1.47 is also attached. See item 13 below for fee.

- ☐ Not Enclosed.

NOTE: Where the filing is a completion in the U.S. of an International Application or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.

- ☐ Application is made by a person authorized under 37 C.F.R. 1.41(c) on behalf of all the above named inventor(s).

(The declaration or oath, along with the surcharge required by 37 CFR 1.16(e) can be filed subsequently).

- ☐ Showing that the filing is authorized.
(not required unless called into question. 37 CFR 1.41(d))

6. Inventorship Statement

WARNING: If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.

The inventorship for all the claims in this application are:

☒ The same.

or

☐ Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,

☐ is submitted.

☐ will be submitted.

7. Language

NOTE: An application including a signed oath or declaration may be filed in a language other than English. An English translation of the non-English language application and the processing fee of \$130.00 required by 37 CFR 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 CFR 1.52(d).

☒ English

☐ Non-English

☐ The attached translation includes a statement that the translation is accurate. 37 C.F.R. 1.52(d).

8. Assignment

☐ An assignment of the invention to _____

☐ is attached. A separate ☐ "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or ☐ FORM PTO 1595 is also attached.

☐ will follow.

NOTE: "If an assignment is submitted with a new application, send two separate letters—one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).

WARNING: A newly executed "CERTIFICATE UNDER 37 CFR 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.

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9. **Certified Copy**

Certified copy(ies) of application(s)

Country	Appln. No.	Filed
Country	Appln. No.	Filed
Country	Appln. No.	Filed

from which priority is claimed

- ☐ is (are) attached.
☐ will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 CFR 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. 120 is itself entitled to priority from a prior foreign application, then complete item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

10. **Fee Calculation** (37 C.F.R. 1.16)

A. ☒ Regular application

CLAIMS AS FILED			
Number filed	Number Extra	Rate	Basic Fee 37 C.F.R. 1.16(a) \$790.00 760.00
Total Claims (37 CFR 1.16(c)) 22 - 20 = 2	×	\$ 22.00 18.00	36.00
Independent Claims (37 CFR 1.16(b)) 4 - 3 =	×	\$ 82.00 78.00	78.00
Multiple dependent claim(s), if any (37 CFR 1.16(d))	+	\$270.00	0.00

- ☐ Amendment cancelling extra claims is enclosed.
☐ Amendment deleting multiple-dependencies is enclosed.
☐ Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 CFR 1.16(d).

Filing Fee Calculation

\$ 874.00

B. ☐ Design application
(\$330.00—37 CFR 1.16(f))

Filing Fee Calculation

\$ _____

C. ☐ Plant application
(\$540.00—37 CFR 1.16(g))

Filing fee calculation

\$ _____

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034475
064020 ST 244250

11. Small Entity Statement(s)

- ☒ Statement(s) that this is a filing by a small entity under 37 CFR 1.9 and 1.27 is (are) attached.

WARNING: "Status as a small entity must be specifically established in each application or patent in which the status is available and desired. Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. The refiling of an application under § 1.53 as a continuation, division, or continuation-in-part (including a continued prosecution application under § 1.53(d)), or the filing of a reissue application requires a new determination as to continued entitlement to small entity status for the continuing or reissue application. A nonprovisional application claiming benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) of a prior application, or a reissue application may rely on a statement filed in the prior application or in the patent if the nonprovisional application or the reissue application includes a reference to the statement in the prior application or in the patent or includes a copy of the statement in the prior application or in the patent and status as a small entity is still proper and desired. The payment of the small entity basic statutory filing fee will be treated as such a reference for purposes of this section." 37 C.F.R. § 1.28(a)(2).

(complete the following, if applicable)

- ☐ Status as a small entity was claimed in prior application
____ / _____, filed on _____, from which benefit
is being claimed for this application under:

35 U.S.C. ☐ 119(e),
☐ 120,
☐ 121,
☐ 365(c),

and which status as a small entity is still proper and desired.

- ☐ A copy of the statement in the prior application is included.

Filing Fee Calculation (50% of A, B or C above)

\$ 437.00 _____

NOTE: Any excess of the full fee paid will be refunded if small entity status is established and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendable under § 1.136. 37 CFR 1.28(a).

12. Request for International-Type Search (37 C.F.R. 1.104(d))

(complete, if applicable)

- ☐ Please prepare an international-type search report for this application at the time when national examination on the merits takes place.

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064020 ST 244250

Time	Temperature	Pressure	Flow rate	Concentration	Yield	Quality
0.0	25.0	1.0	1.0	1.0	1.0	1.0
0.5	25.0	1.0	1.0	1.0	1.0	1.0
1.0	25.0	1.0	1.0	1.0	1.0	1.0
1.5	25.0	1.0	1.0	1.0	1.0	1.0
2.0	25.0	1.0	1.0	1.0	1.0	1.0
2.5	25.0	1.0	1.0	1.0	1.0	1.0
3.0	25.0	1.0	1.0	1.0	1.0	1.0
3.5	25.0	1.0	1.0	1.0	1.0	1.0
4.0	25.0	1.0	1.0	1.0	1.0	1.0
4.5	25.0	1.0	1.0	1.0	1.0	1.0
5.0	25.0	1.0	1.0	1.0	1.0	1.0
5.5	25.0	1.0	1.0	1.0	1.0	1.0
6.0	25.0	1.0	1.0	1.0	1.0	1.0
6.5	25.0	1.0	1.0	1.0	1.0	1.0
7.0	25.0	1.0	1.0	1.0	1.0	1.0
7.5	25.0	1.0	1.0	1.0	1.0	1.0
8.0	25.0	1.0	1.0	1.0	1.0	1.0
8.5	25.0	1.0	1.0	1.0	1.0	1.0
9.0	25.0	1.0	1.0	1.0	1.0	1.0
9.5	25.0	1.0	1.0	1.0	1.0	1.0
10.0	25.0	1.0	1.0	1.0	1.0	1.0
10.5	25.0	1.0	1.0	1.0	1.0	1.0
11.0	25.0	1.0	1.0	1.0	1.0	1.0
11.5	25.0	1.0	1.0	1.0	1.0	1.0
12.0	25.0	1.0	1.0	1.0	1.0	1.0
12.5	25.0	1.0	1.0	1.0	1.0	1.0
13.0	25.0	1.0	1.0	1.0	1.0	1.0
13.5	25.0	1.0	1.0	1.0	1.0	1.0
14.0	25.0	1.0	1.0	1.0	1.0	1.0
14.5	25.0	1.0	1.0	1.0	1.0	1.0
15.0	25.0	1.0	1.0	1.0	1.0	1.0
15.5	25.0	1.0	1.0	1.0	1.0	1.0
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16.5	25.0	1.0	1.0	1.0	1.0	1.0
17.0	25.0	1.0	1.0	1.0	1.0	1.0
17.5	25.0	1.0	1.0	1.0	1.0	1.0
18.0	25.0	1.0	1.0	1.0	1.0	1.0
18.5	25.0	1.0	1.0	1.0	1.0	1.0
19.0	25.0	1.0	1.0	1.0	1.0	1.0
19.5	25.0	1.0	1.0	1.0	1.0	1.0
20.0	25.0	1.0	1.0	1.0	1.0	1.0
20.5	25.0	1.0	1.0	1.0	1.0	1.0
21.0	25.0	1.0	1.0	1.0	1.0	1.0
21.5	25.0	1.0	1.0	1.0	1.0	1.0
22.0	25.0	1.0	1.0	1.0	1.0	1.0
22.5	25.0	1.0	1.0	1.0	1.0	1.0
23.0	25.0	1.0	1.0	1.0	1.0	1.0
23.5	25.0	1.0	1.0	1.0	1.0	1.0
24.0	25.0	1.0	1.0	1.0	1.0	1.0
24.5	25.0	1.0	1.0	1.0	1.0	1.0
25.0	25.0	1.0	1.0	1.0	1.0	1.0

- NOTE:** 37 CFR 1.21(f) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 CFR 1.53(f) and this, as well as the changes to 37 CFR 1.53 and 1.78(a)(1), indicate that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(f) must be paid, within 1 year from notification under § 53(f).

14. Method of Payment of Fees

- NOTE:** Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 CFR 1.22(b).

(Application Transmittal [4-1]—page 8 of 11)

15. Authorization to Charge Additional Fees

WARNING: If no fees are to be paid on filing, the following items should not be completed.

WARNING: Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

- ☐ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No. _____:

- ☐ 37 C.F.R. 1.16(a), (f) or (g) (filing fees)
☐ 37 C.F.R. 1.16(b), (c) and (d) (presentation of extra claims)

NOTE: Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 CFR 1.16(d)), it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.

- ☐ 37 C.F.R. 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)
☐ 37 C.F.R. §§ 1.17(a)(1)-(5) (extension fees pursuant to § 1.136(a)).
☐ 37 C.F.R. 1.17 (application processing fees)

NOTE: ". . . A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).

- ☐ 37 C.F.R. 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. 1.311(b))

NOTE: Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 CFR 1.311(b).

NOTE: 37 CFR 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying, . . . the issue fee. . . ." From the wording of 37 CFR 1.28(b), (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

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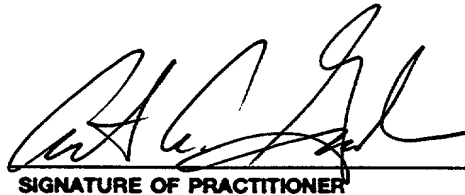
65400000 51244260

16. Instructions as to Overpayment

NOTE: "... Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts; amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).

☐ Credit Account No. _____

☒ Refund



SIGNATURE OF PRACTITIONER

Arthur A. Gardner

(type or print name of attorney)

Paper Mill Village, Building 20

P.O. Address

680 Village Trace, Suite E
Marietta, Georgia 30067

Reg. No. 33,887

Tel. No. (770) 984-2300

Customer No.

☒ **Incorporation by reference of added pages**

(check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an international application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED)

- ☒ **Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed**

Number of pages added 5

- ☐ **Plus Added Pages for Papers Referred to in Item 4 Above**

Number of pages added _____

- ☐ **Plus added pages deleting names of inventor(s) named in prior application(s) who is/are no longer inventor(s) of the subject matter claimed in this application.**

Number of pages added _____

- ☐ **Plus "Assignment Cover Letter Accompanying New Application"**

Number of pages added _____

- ☐ **Statement Where No Further Pages Added**

(if no further pages form a part of this Transmittal, then end this Transmittal with this page and check the following item)

- ☐ **This transmittal ends with this page.**

NOTE: See 37 C.F.R. § 1.78.

WARNING: *If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. §§ 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. §§ 120, 121 or 365(c). (35 U.S.C. § 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. §§ 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.*

(complete the following, if applicable)

- ☐ Amend the specification by inserting, before the first line, the following sentence:

A. 35 U.S.C. § 119(e)

NOTE: *"Any nonprovisional application claiming the benefit of one or more prior filed copending provisional applications must contain or be amended to contain in the first sentence of the specification following the title a reference to each such prior provisional application, identifying it as a provisional application, and including the provisional application number (consisting of series code and serial number)." 37 C.F.R. § 1.78(a)(4).*

- ☒ "This application claims the benefit of U.S. Provisional Application(s) No(s).:

APPLICATION NO(S).:

FILING DATE

60 / 100,898

09/23/1998

_____ / _____

B. 35 U.S.C. §§ 120, 121 and 365(c)

NOTE: "Except for a continued prosecution application filed under § 1.53(d), any nonprovisional application claiming the benefit of one or more prior filed copending nonprovisional applications or international applications designating the United States of America must contain or be amended to contain in the first sentence of the specification following the title a reference to each such prior application, identifying it by application number (consisting of the series code and serial number) or international application number and international filing date and indicating the relationship of the applications. . . . Cross-references to other related applications may be made when appropriate." (See § 1.14(a)). 37 C.F.R. § 1.78(a)(2).

- ☐ "This application is a
☐ continuation
☐ continuation-in-part
☐ divisional

of copending application(s)

- ☐ application number 0 / _____ filed on _____"
☐ International Application _____ filed on _____
_____ and which designated the U.S."

NOTE: The proper reference to a prior filed PCT application that entered the U.S. national phase is the U.S. serial number and the filing date of the PCT application that designated the U.S.

NOTE: (1) Where the application being transmitted adds subject matter to the International Application, then the filing can be as a continuation-in-part or (2) if it is desired to do so for other reasons then the filing can be as a continuation.

NOTE: The deadline for entering the national phase in the U.S. for an international application was clarified in the Notice of April 28, 1987 (1079 O.G. 32 to 46) as follows:

"The Patent and Trademark Office considers the International application to be pending until the 22nd month from the priority date if the United States has been designated and no Demand for International Preliminary Examination has been filed prior to the expiration of the 19th month from the priority date and until the 32nd month from the priority date if a Demand for International Preliminary Examination which elected the United States of America has been filed prior to the expiration of the 19th month from the priority date, provided that a copy of the international application has been communicated to the Patent and Trademark Office within the 20 or 30 month period respectively. If a copy of the international application has not been communicated to the Patent and Trademark Office within the 20 or 30 month period respectively, the international application becomes abandoned as to the United States 20 or 30 months from the priority date respectively. These periods have been placed in the rules as paragraph (h) of § 1.494 and paragraph (i) of § 1.495. A continuing application under 35 U.S.C. 365(c) and 120 may be filed anytime during the pendency of the international application."

- ☒ "The nonprovisional application designated above, namely application _____ / _____, filed _____, claims the benefit of U.S. Provisional Application(s) No(s):

APPLICATION NO(S):

FILING DATE

_____ / _____	_____ "
_____ / _____	_____ "
_____ / _____	_____ "

- ☐ Where more than one reference is made above, please combine all references into one sentence.

18. Relate Back—35 U.S.C. § 119 Priority Claim for Prior Application

The prior U.S. application(s), including any prior International Application designating the U.S., identified above in item 17B, in turn itself claim(s) foreign priority(ies) as follows:

Country	Appln. no.	Filed on
---------	------------	----------

The certified copy(ies) has (have)

- ☐ been filed on _____, in prior application 0 / _____, which was filed on _____
- ☐ is (are) attached.

WARNING: *The certified copy of the priority application that may have been communicated to the PTO by the International Bureau may not be relied on without any need to file a certified copy of the priority application in the continuing application. This is so because the certified copy of the priority application communicated by the International Bureau is placed in a folder and is not assigned a U.S. serial number unless the national stage is entered. Such folders are disposed of if the national stage is not entered. Therefore, such certified copies may not be available if needed later in the prosecution of a continuing application. An alternative would be to physically remove the priority documents from the folders and transfer them to the continuing application. The resources required to request transfer, retrieve the folders, make suitable record notations, transfer the certified copies, enter and make a record of such copies in the Continuing Application are substantial. Accordingly, the priority documents in folders of international applications that have not entered the national stage may not be relied on. Notice of April 28, 1987 (1079 O.G. 32 to 46).*

19. Maintenance of Copendency of Prior Application

NOTE: *The PTO finds it useful if a copy of the petition filed in the prior application extending the term for response is filed with the papers constituting the filing of the continuation application. Notice of November 5, 1985 (1060 O.G. 27).*

A. ☐ Extension of time in prior application

(This item must be completed and the papers filed in the prior application, if the period set in the prior application has run.)

- ☐ A petition, fee and response extends the term in the pending prior application until _____
- ☐ A copy of the petition filed in prior application is attached.

B. ☐ Conditional Petition for Extension of Time in Prior Application

(complete this item, if previous item not applicable)

- ☐ A conditional petition for extension of time is being filed in the pending prior application.
- ☐ A copy of the conditional petition filed in the prior application is attached.

20. Further Inventorship Statement Where Benefit of Prior Application(s) Claimed

(complete applicable item (a), (b) and/or (c) below)

- (a) ☐ This application discloses and claims only subject matter disclosed in the prior application whose particulars are set out above and the inventor(s) in this application are
- ☐ the same.
- ☐ less than those named in the prior application. It is requested that the following inventor(s) identified for the prior application be deleted:

(type name(s) of inventor(s) to be deleted)

- (b) ☒ This application discloses and claims additional disclosure by amendment and a new declaration or oath is being filed. With respect to the prior application, the inventor(s) in this application are
- ☒ the same.
- ☐ the following additional inventor(s) have been added:

(type name(s) of inventor(s) to be added)

- (c) The inventorship for all the claims in this application are
- ☒ the same.
- ☐ not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made
- ☐ is submitted.
- ☐ will be submitted.

21. Abandonment of Prior Application (if applicable)

- ☐ Please abandon the prior application at a time while the prior application is pending, or when the petition for extension of time or to revive in that application is granted, and when this application is granted a filing date, so as to make this application copending with said prior application.

NOTE: According to the Notice of May 13, 1983 (103, TMOG 6-7), the filing of a continuation or continuation-in-part application is a proper response with respect to a petition for extension of time or a petition to revive and should include the express abandonment of the prior application conditioned upon the granting of the petition and the granting of a filing date to the continuing application.

22. Petition for Suspension of Prosecution for the Time Necessary to File an Amendment

WARNING: "The claims of a new application may be finally rejected in the first Office action in those situations where (1) the new application is a continuing application of, or a substitute for, an earlier application, and (2) all the claims of the new application (a) are drawn to the same invention claimed in the earlier application, and (b) would have been properly finally rejected on the grounds of art of record in the next Office action if they had been entered in the earlier application." M.P.E.P., § 706.07(b), 6th ed., rev. 2.

NOTE: Where it is possible that the claims on file will give rise to a first action final for this continuation application and for some reason an amendment cannot be filed promptly (e.g., experimental data is being gathered) it may be desirable to file a petition for suspension of prosecution for the time necessary.

(check the next item, if applicable)

- ☐ There is provided herewith a Petition To Suspend Prosecution for the Time Necessary to File An Amendment (New Application Filed Concurrently)

23. Small Entity (37 C.F.R. § 1.28(a))

- ☐ Applicant has established small entity status by the filing of a statement in parent application /_____ on _____.
- ☐ A copy of the statement previously filed is included.

WARNING: See 37 C.F.R. § 1.28(a).

WARNING: "Small entity status must not be established when the person or persons signing the . . . statement can *unequivocally* make the required self-certification." M.P.E.P., § 509.03, 6th ed., rev. 2, July 1996 (emphasis added).

24. NOTIFICATION IN PARENT APPLICATION OF THIS FILING

- ☐ A notification of the filing of this
(check one of the following)
- ☐ continuation
 - ☐ continuation-in-part
 - ☐ divisional

is being filed in the parent application, from which this application claims priority under 35 U.S.C. § 120.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(b)) - INDEPENDENT INVENTOR

Docket Number (Optional)

8L05.1-011

Applicant, Patentee, or Identifier: LASTER, Maurice Scott

Application or Patent No.: _____

Filed or Issued: _____

Title: METHOD AND APPARATUS FOR REMOTE TELEPHONE CALL ORIGINATION

As a below named inventor, I hereby state that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

☒ the specification filed herewith with title as listed above.

☐ the application identified above.

☐ the patent identified above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☒ No such person, concern, or organization exists.

☐ Each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern, or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

Maurice Scott Laster

NAME OF INVENTOR

NAME OF INVENTOR

NAME OF INVENTOR

M. Scott Laster

Signature of inventor

Signature of inventor

Signature of inventor

4 February 1999

Date

Date

Date

Patent
Docket No. 8L05.1-011
Document: 8L05.1-011.pto

APPLICATION FOR LETTERS PATENT
UNITED STATES OF AMERICA

Be it known that I, Maurice Scott Laster, residing at 3291 West Roxboro Road, Atlanta, Georgia 30324, a citizen of the United States of America, have invented certain new and useful improvements in a

METHOD AND APPARATUS FOR REMOTE TELEPHONE CALL ORIGINATION

of which the following is a specification.

ARTHUR A. GARDNER & ASSOCIATES, P.C.

Paper Mill Village, Building 20
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(770) 984-2300

METHOD AND APPARATUS FOR REMOTE TELEPHONE CALL ORIGINATION**CROSS REFERENCE TO RELATED APPLICATION**

5 The present non-provisional patent application is a continuation-in-part of U.S. Provisional Application Serial Number 60/100,898, filed on 23 September 1998.

BACKGROUND OF THE INVENTION

10 Inbound vs. outbound telephone rates vary substantially from one market to another around the world. Indeed, some markets have extremely high outbound telephone rates in comparison to inbound rates due to the local communication companies having a monopoly in that market. As an example, outbound calls from India to the USA can cost four times as much as inbound calls from the USA to India. For several years, so-called "callback" schemes have been offered as a means to bypass the high outbound telephone rates of the various monopoly telecommunication companies around the world. Callback services have the potential of saving up to 50% or more on international long distance calls. However, known callback services have been difficult for a customer to use. This is so because the customer has had to dial extra digits, requiring more time and introducing additional opportunities for error. Because of this, callback services have met with only limited market success and even then only when outbound telephone rates from the monopoly telecommunication companies are so excessive as to justify the extra effort by the customer to use the callback service.

20 Known callback services work by assigning each customer a unique phone number that terminates to an international callback platform. The international callback platform is a facility located in a country (for example, in the United States) inbound to the customer's country that has substantial competition for outbound telephone rates and therefore has much lower long distance rates (often as much as 80% lower than in some locales) than the outbound rates in that country. To use the service, the customer calls his unique international phone number and then hangs up. This prompts the international callback platform to make an inbound call to the user's telephone. The user then answers the phone and gets a new (second)

dial tone from the international callback platform. Using the second dial tone, the customer dials the phone number of the destination party that he wishes to reach. The international callback platform uses the new number to call the desired number and then bridges the two calls together so that the user can talk to the desired party. Effectively, an outbound call from the customer's country is replaced by two calls: an inbound call to the customer and an outbound call from a country with low outbound rates to the destination party.

To speed things up and to make the use of international callback easier, it has been known to utilize speed dialing codes for the most commonly called international phone numbers for a customer. Under this scheme, the customer can create short speed dialing codes for his most commonly called international phone numbers. First, the customer would call the international callback platform and create a two digit speed dialing code assigned to a desired phone number. For example, the customer might assign the code "17" to his or her parents' phone number in a different country. Once a callback session has been initiated (i.e. once the international callback platform has dialed up the customer's telephone and the customer has answered), the customer can then enter the short speed dial code to direct the international callback platform to call the assigned telephone number. The entry of the short speed dialing code directs the international callback platform to call the particular number previously created. This technique can reduce the number of digits that the customer must enter during the second stage of dialing. However, it still requires that the customer make a conscious choice to call the international callback platform and dial twice (once to call the international callback platform and once to call the number). Moreover, it requires the customer to remember the speed dialing codes and it is difficult to create, change, and delete the speed dialing codes in the international callback platform.

In another effort to improve the ease of initiating or using a callback scheme, a callback provider installs small local gateway platforms in various large cities that it serves along with a larger international callback platform in the low-cost long distance market (i.e., the U.S.). The customer is then assigned a unique local telephone number that reaches the local gateway platform. To initiate a callback,

the customer calls the local telephone number and hangs up. The local gateway platform then sends a data message via a data network to the international callback platform which then calls the customer's telephone number. The customer then answers the telephone and receives a second dial tone to allow him to dial his desired party. This method reduces the number of digits that the customer must dial in the first dialing stage because he only has to dial a local number, rather than calling an international number to initiate the callback session. However, the user must still dial all of the digits in the international telephone number he desires to call. This represents only a marginal improvement over the prior techniques.

What is needed then is a method and apparatus that allows the customer to enjoy the cost-savings and benefits of a callback service without the difficult and time-consuming effort needed to initiate a callback session. It is to the provision of such a method and apparatus that the present invention is primarily directed.

SUMMARY OF THE INVENTION

Briefly described, in a first preferred form the present invention comprises a method of placing a long distance call (or other relatively high-cost call) using a mobile telephone of the type having a data messaging device included therein for communicating with a data network and using a Remote Telephone Call Origination ("RTCO") platform to avoid high charges in one locale and to incur lower charges in a second, lower-cost locale. The method comprises the steps of:

- (a) capturing a relatively high-cost telephone number dialed by a user of the mobile telephone;
- (b) transmitting a data message to the data network using the data message device, the data message including the dialed telephone number and identifying the mobile telephone number;
- (c) relaying the message from the data network to the RTCO platform;
- (d) placing a first call from the RTCO platform to the mobile telephone; and
- (e) placing a second call from the RTCO platform to the long distance telephone number dialed in a manner to connect the first and second calls to each other.

Preferably, the step of transmitting a data message is carried out without requiring that the user do anything more than initially dial the long distance number (in some telephones this might include also pressing a <send> key).

Also preferably, the message relayed from the data network to the RTCO platform includes the telephone number of the telephone.

Also, the method preferably includes the step of monitoring a telephone number dialed by the user to determine if the telephone number dialed is a relatively high-cost number. If the number dialed is a low-cost call, then the call is placed directly without using the callback platform. If the number dialed is a relatively high-cost telephone call the call is not placed directly but instead the call is made using the RTCO platform as described above. Normally, this criteria would be used to decide how to handle long distance calls and cellular roaming calls. Alternatively, in the case of local calls the criteria could include whether the cost of the local call is greater than long distance calls so that local calls could be placed indirectly using the RTCO platform as described above. One skilled in the art can see how this invention can be used to allow a carrier to control the long distance of their users while they are roaming in another network other than one controlled by that carrier.

In another preferred form, the invention comprises a mobile telephone for use with a telephony network, for use with an RTCO platform, and for use with a data messaging network configured to relay messages to the RTCO platform. The mobile telephone includes circuitry for connecting the mobile telephone to the telephony network and an internal data messaging capability for communicating with the data network. A user interface is provided for initiating telephone calls (such as a keypad), such as for dialing telephone numbers. Control means are provided for monitoring the telephone number dialed by the user and the control means is responsive to the dialing of a relatively high-cost number for transmitting a RTCO message from the data messaging device to the data network to initiate a RTCO call from the RTCO platform.

Preferably, the control means is operative for monitoring a telephone number dialed by the user to determine if the telephone call is relatively high-cost, such as whether the number is a local number or is a long distance number. If the number

dialed is a low-cost call, then the call is placed directly and if the number dialed is a relatively high-cost call, the call is not placed directly, but instead use is made of the RTCO platform as described above.

This method and apparatus has some very distinct advantages over the known prior art. First, the invention allows the user (customer) to take advantage of differences between inbound and outbound calling rates. Also, the user gains the advantages of something like a callback scheme without ever knowing that he is utilizing something like a callback scheme. This makes the operation of the cost-saving technique completely transparent, without additional difficulty for the user, and is simple, fast, and automatic. It also implements a callback scheme in a relatively short time, with the customer not knowing that any additional time has been required to employ a callback scheme (if indeed any extra time is required). Indeed, the total time to connect with the desired telephone number should be roughly comparable to the amount of time it takes to make the call directly. Also, the user is not required to punch additional buttons or to remember any special codes in order to take advantage of the callback scheme. Thus, the customer is able to enjoy all the benefits (cost savings) of a callback scheme without any of the drawbacks normally attendant thereto.

The present invention has a distinct advantage over known callback schemes. In the present invention, the substantial cost savings is achieved by the use of a technique or scheme referred to herein as Remote Telephone Call Origination (RTCO). This differs from known callback services in that the user of RTCO doesn't need to make an initial call to a callback platform. Instead, the user simply dials the destination party normally. The user's telephone device communicates by a Data Messaging Device to an RTCO platform to originate the call in a manner that is transparent to the user. Thus, the user never has to first dial a callback platform and then call his destination number. This is much simpler, easier to use, and faster than known callback schemes.

Accordingly, it is an object of the present invention to provide a method and apparatus for a user to take advantage of differences in inbound vs. outbound telephone rates with little if any additional effort.

It is another object of the present invention to provide a method and apparatus for a carrier to control who offers long distance telephone service even when a user is not in their network.

It is another object of the present invention to provide a method and apparatus for RTCO which is fast in execution.

It is another object of the present invention to provide a method and apparatus for RTCO which can be transparent to the user of the telephone.

It is yet a further object of the present invention to provide a method and apparatus for RTCO which requires little if any additional effort or keypad strokes by the user of the telephone.

It is yet a further object of the present invention to provide a method and mobile telephone apparatus for automatically placing calls using a RTCO platform.

It is a further object of the present invention to provide a method and apparatus for RTCO which is responsive to cost criteria to minimize the cost of calls.

It is another object of the present invention to provide a method and apparatus for RTCO which does not require the use of special dialing codes.

It is yet a further object of the present invention to provide a method and apparatus for RTCO which is operative for minimizing or avoiding high long distance charges, high roaming charges, and high local charges.

These and other objects, features, and advantages of the present invention will become more apparent upon reading the following specification in conjunction with the accompanying drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic, functional depiction of a mobile telephone apparatus according to a preferred form of the invention and shown in conjunction with a data messaging network, a RTCO platform, and a telephony network.

Fig. 2 is a flow chart depicting how a control module portion of the mobile telephone apparatus of Fig. 1 operates to place calls directly or to place calls indirectly using the RTCO platform.

Fig. 3 is a detailed flow chart of a portion of the flow chart of Fig. 2.

Figs. 4A and 4B are, collectively, a detailed flow chart of a portion of the flow chart of Fig. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now in detail to the drawing figures, wherein like reference numerals represent like parts throughout several views, Fig. 1 schematically depicts a mobile telephone apparatus 10 according to a preferred form of the invention. The mobile telephone apparatus 10 includes a keypad and user interface 11 in communication with a control module 12. The control module 12 in turn is in communication with a data messaging device 13 and telephony network circuitry 14. Thus, the mobile telephone 10 includes an internal data messaging device 13 for communicating with an external data messaging network 16. Likewise, the telephony network circuitry 14 included within the mobile telephone 10 is operative for communicating with the telephony network 17. Furthermore, the mobile telephone 10 is intended to be used in conjunction with a Remote Telephone Call Origination ("RTCO") platform 18.

The internal data messaging device 13 is configured for sending and optionally receiving data messages to and from the data messaging network 16. The data messaging network is configured to relay certain data messages to the RTCO platform, as shown. The RTCO platform 18 is configured to, in response to certain data messages from the data messaging network, place a call to the mobile telephone through the telephony network and also to place another call to the number dialed by the mobile telephone. The RTCO platform is also configured for connecting these calls together.

In general, mobile telephones are already known of which include a keypad and user interface, a control module and a data messaging device. One example of such is a GH 688 model cellular telephone including a built-in two-way "pager-like" functionality called "Short Messaging" and is manufactured by Ericsson. However, such known prior mobile telephones are not configured and programmed to effect the RTCO scheme described herein. For example, the control module 12 forming part of the novel mobile telephone 10 is operative for deciding whether to complete a call to a dialed number directly or whether to complete the call to the dialed

number indirectly using the RTCO platform. This decision-making within the control module 12 is carried out following the logic depicted generally in Fig. 2.

Fig. 2 shows the operation of the control module 12 as it relates to utilizing a RTCO scheme to minimize costs of operating the mobile telephone 10. In this regard, the control module 12 executes a process indicated generally at 30. The process 30 includes an initial step 31 of capturing a telephone number dialed by the user of the mobile telephone 10. Next, in step 32 the captured telephone number is evaluated to determine if it would be better to allow the telephone number to be dialed directly or to employ an RTCO platform to dial the telephone number. This evaluation leads to a decision step 33 in which the decision is made to either use the RTCO platform or not. If the RTCO platform is not to be used, then step 34 is carried out and the call is placed directly to the telephony network. On the other hand, if the RTCO platform is to be used, then process step 36 is carried out and a data message is passed from the data messaging device 13 to the data messaging network 16. The data message contains the telephone number being dialed and the identity of the mobile telephone (and optionally additional information such as subscriber ID, equipment number, security code, network code, etc.). Next, in process step 37 the data message is relayed from the data messaging network 16 to the RTCO platform 18. Next, in process step 38 the RTCO platform 18 places a first call to the mobile telephone and then places a second call to the number dialed by the mobile telephone in a manner to connect the two phone calls to each other. This is shown by way of example in process step 39, wherein the RTCO platform 18 connects the two telephone calls together.

The mobile telephone 10 preferably is programmed to automatically answer (without the user knowing that this is taking place) the incoming telephone call from the RTCO platform. Existing known mobile telephones typically do not answer incoming calls automatically and therefore would likely require some hardware and/or software modifications to incorporate this feature. What the user of the mobile telephone perceives is that initially the user dials the telephone number desired (and typically presses a <send> key), and ultimately the call is placed to the number called. Whether this happens directly or indirectly using the RTCO platform

preferably is entirely transparent and unseen by the user of the mobile telephone 10.

Referring now to Fig. 3, one way of implementing the process steps 32 and 33 can be considered in more detail. As shown in Fig. 3, process steps 32,33 can involve a multi-tiered logic to evaluate whether it is better to allow the number
 5 dialed to be directly placed or whether to employ the RTCO platform. In the multi-tiered logic shown in Fig. 3, the first step is to evaluate, as shown in process step 41, whether the call involves high long distance charges. If high long distance charges do apply, then the call is placed using the RTCO platform, indicated generally at 36-39. Alternately, if the call does not involve high long distance
 10 charges, then next the call is evaluated to see if high cost roaming charges apply, as generally indicated in decision step 42. Again, if high cost roaming charges apply, then the call is placed using the RTCO platform according to process steps 36-39. Alternately, if high cost roaming charges are not involved, then decision process step 43 determines whether high cost local charges apply to this call (such as in Europe where the calling party always pays for the call). If the answer to this
 15 is yes, that high cost local charges will accrue, then the call can be placed using the RTCO platform according to process steps 36-39. Alternately, if high cost local charges are not involved, then the call is placed directly to the telephony network using process step 34. In this way, if a call involves high long distance charges, high
 20 roaming charges, or high cost local charges, then it can be placed using the RTCO platform. On the other hand, if it does not involve such high cost charges, then it can be placed directly. This decision making can be carried out in the context of look-up tables which are used to store logical values from which it can be deduced whether the call involves high charges.

25 The table shown is searched by the control software from the top to the bottom and the first entry that matches is used. If there is no entry (such as for a location area identity), then this indicates that the entry is a "don't care" entry and therefore matches any location area identity. The "----" in the initial dialed digits column indicates that any numbers will match (a "don't care" or "wild card"
 30 character situation). The ability to make routing decisions based on the location area identity is an optional feature. In the above-noted table, a "+" denotes the

international dialing code in that particular country such as "011" when calling from the United States or "0011" when calling from Australia. If the mobile phone is located in a country whose network code is not in the table, then the RTCO is not available for such a call and all such calls must be made in traditional (direct) manner.

In the illustrative table, for network code 217 ("country 1"), any outgoing call to an international number (as indicated by the international dialing code) uses the RTCO. For network code 222 ("country 2"), any outgoing call that is long distance within "country 2" (indicated by a "0" before the number dialed) any international call uses the RTCO. In the above-noted example, for network code 247 ("country 3"), all outgoing calls (whether local, long-distance, or international) from the location area identity 04 use the RTCO. For all other location area identities in "country 3", only international calls use the RTCO.

NETWORK CODE	"LAI" LOCATION AREA IDENTITY	INITIAL DIALED DIGITS
217 {country 1}	-	+-----
222 {country 2}	- -	0-----
247 {country 3}	04** -	----- +-----

As shown by the above discussion, one advantage of the look-up table approach is that it can be custom tailored to a number of different cost scenarios, to carefully avoid high telephone charges. This lookup table can be changed from time to time using data messages transmitted to the mobile telephone, such as Short Messages to a GSM phone.

Referring now to Figs. 4A and 4B, in the process step 38 of Fig. 2 can be considered in greater detail. As shown in Fig. 4A, the first part of process step 38 is step 71 in which the RTCO platform places a call to the mobile telephone. This is followed by decision 72 in which the process branches one way or another based on whether the mobile phone has an auto-answer capability. If the mobile phone

has an auto-answer capability, then the next step is step 73 in which the mobile phone automatically answers the incoming call immediately. Alternately, if the mobile phone does not have an auto-answer capability, the mobile phone rings for a time T1 according to process step 74. If the user answers during the time T1 (see decision branch 75), then the RTCO platform connects the first call to the telephony circuitry within the platform that will be used for the second call to the number dialed according to process step 76. Otherwise, the RTCO platform terminates the call setup process by disconnecting from the first call according to process step 77.

After process step 76, the RTCO platform places the second call to the number originally dialed by the user and sets the timer T2 according to process step 78. Next, according to decision step 79, if the called party answers within a time T2 the conversation between the user and the called party takes place according to process step 81. Otherwise, the RTCO platform terminates the call setup process by disconnecting from the first and second calls according to process step 82. After the conversation terminates, the user or called party "hangs up" (disconnects from the call) according to process step 83. The RTCO platform then terminates the active call by disconnecting both the first and second calls according to process step 84.

The method and apparatus of the present invention has ready application to "dual-band" mobile phone provided by PCS1900 carriers in the U.S. to subscribers. PCS1900 carriers use the GSM digital standard in the 1900 MHz spectrum in the U.S., as versus the rest of the world which uses GSM in the 900 MHz spectrum. "Dual-band" mobile phones work for both 900 and 1900 MHz and therefore can be used in the U.S. and internationally. Using the method and apparatus of the present invention in conjunction with such dual-band mobile phones, some or all mobile-originated calls made by the U.S. subscriber while traveling internationally can be connected using the Remote Telephone Call Origination scheme with the less expensive U.S. outbound telephone rates.

As those skilled in the art can appreciate, the process of "identifying the mobile telephone" in the data message from the mobile phone can be done via special codes, a unique data address identifier, a parameter within the contents of

the data message, or other means. These and other means are encompassed by the term "identifying the mobile telephone" in the claims.

The process of "dialing a telephone number" on a mobile phone can be done on some phones by dialing a phone number and pressing a <SEND> key (or some similar key) whereas in other phones the pressing of the <SEND> key is not required. Further, most mobile phones allow for the storage of telephone numbers and associated names which may be retrieved from memory and dialed by pressing the <SEND> key. These and other commonly known means of dialing a telephone number from a mobile phone are encompassed by the term "dialing a telephone number" in the claims.

As those skilled in the art can appreciate, RTCO can be used by a GSM mobile phone with the SIM card (a Subscriber Identify Module) serving as the control module and a SIM Toolkit Application comprising the software in the control module. The "Short Messaging" capability in the GSM phone can serve as the data messaging service and make use of GSM short messaging service as a data messaging network.

As those skilled in the art can also appreciate, RTCO can be used by an IS-41 mobile phone. Special programming in the mobile phone can serve as the software for the control module. The IS-41 "call origination messaging" or IS-41 "short messaging" capability in the mobile phone can serve as the data messaging device and make use of the IS-41 signaling network as data messaging network.

As those skilled in the art can further appreciate, RTCO can be used by a programmable landline phone such as a PC with software having call control over a built-in landline telephone. The call control software on the PC can serve as the control module. The IP (Internet Protocol) messaging capability within the PC can serve as the data messaging device on an IP network (e.g. 33.6 Kbps dial-up to the Internet Worldwide Web, a Wide Area Network WAN, etc.) can serve as a data messaging network.

As those skilled in the art can readily appreciate, the data messaging network can take many different forms, such as an SS7 signaling network, USSD Network, GPRS network, synchronous data network, asynchronous data network, UMTS

network, etc.

It should be kept in mind that, while the invention described herein is described to operate automatically and transparently, a mobile telephone could be devised to incorporate the present invention and to include or allow control by the user. In this regard, the user could turn the use of the RTCO service on or off. This could be done through a menu option, such as is currently used to select or de-select many features and functions in cellular telephones. Also, those skilled in the art will recognize that in addition to placing a single call using the RTCO platform, the present invention can be utilized to initiate conference calls and to allow multiple calls to be placed (and toggled therebetween).

It should be understood that in the claims, the term "dialing" or to "dial" a telephone number is intended to encompass dialing a number without pressing an activation key, such as the <send> key or dialing a number and pressing an activation key, such as the <send> key.

While the invention has been disclosed in preferred forms, those skilled in the art will recognize that many modifications, additions, and deletions can be made therein without departing from the spirit and scope of the invention as set forth in the following claims.

CLAIMS

I claim:

1. A method of placing a long distance call using a mobile telephone of the type having a data messaging device for communicating with a data network and using an RTCO platform to avoid charges in one locale and to incur charges in a second locale, the method comprising the steps of:

capturing a telephone number dialed by a user of the mobile telephone,
transmitting a data message to the data network using the data messaging device, the data message including the dialed telephone number and identifying the mobile telephone;

relaying the data message from the data network to the RTCO platform;
placing a first call from the RTCO platform to the mobile telephone; and
placing a second call from the RTCO platform to the number dialed in a manner to connect the first and second calls to each other.

2. A method as claimed in Claim 1 wherein the first call is automatically answered by the mobile telephone.

3. A method as claimed in Claim 1 wherein the step of transmitting a data message is carried out without requiring that the user do anything more than dial the telephone number initially.

4. A method as claimed in Claim 1 wherein the message relayed from the data network to the RTCO platform includes the telephone number of the mobile telephone.

5. A method as claimed in Claim 1 wherein the mobile telephone uses Short Messaging for the data network.

6. A method as claimed in Claim 1 further comprising the step of comparing the telephone number dialed by the user with a look-up table to determine if the telephone number dialed should be placed directly or should instead be placed using the RTCO platform.

7. A method as claimed in Claim 6 wherein the look-up table is updated from time to time using data messages transmitted to the mobile telephone.

8. A mobile telephone for use with a telephony network, for use with a RTCO platform, and for use with a data messaging network configured to relay messages to the RTCO platform, said mobile telephone comprising:

circuitry for connecting said mobile telephone to the telephony network;

an internal data messaging device for communicating with the data network;

a user input interface for initiating telephone calls, including for dialing telephone calls; and

control means for monitoring a telephone number dialed by the user and responsive to the dialing of certain telephone numbers for transmitting a RTCO message from the internal data messaging device to the data network to initiate an RTCO call from the RTCO platform.

9. A mobile telephone as claimed in Claim 8 wherein said control means is operative to automatically answer a call from the RTCO platform.

10. A mobile telephone as claimed in Claim 8 wherein said control means is operative for transmitting the RTCO message without requiring that the user do anything more than dial the telephone number.

11. A mobile telephone as claimed in Claim 8 wherein said mobile telephone is adapted for Short Messaging.

12. A mobile telephone as claimed in Claim 8 wherein said means for monitoring is operative for monitoring a telephone number dialed by the user to determine whether the telephone call should be placed directly or instead the call should be placed using the RTCO platform.

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13. A mobile telephone as claimed in Claim 8 wherein said control means is operative for comparing the telephone number dialed by the user with a look-up table to determine if the telephone number dialed should be placed directly or should instead be placed using the RTCO platform.

14. A mobile telephone as claimed in Claim 13 wherein the look-up table within said control means is updated from time to time using data messages transmitted to the mobile telephone.

15. In a mobile telephone of the type for use with a telephony network and having an internal data messaging device and a keypad for dialing a telephone number, **the improvement therein comprising** that control means are provided for monitoring the dialing of a telephone number by a user of the mobile telephone and further that the internal data messaging device is operative for communicating a message to a data messaging network for relaying the message to an RTCO platform to complete the call using the RTCO platform without requiring that the user dial any additional numbers.

16. The improvement of Claim 15 wherein said control means is operative to automatically answer a call from the RTCO platform.

17. The improvement of Claim 15 wherein said control means is operative for transmitting the RTCO message without requiring that the user do anything more than dial the telephone number.

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18. The improvement of Claim 15 wherein said mobile telephone is adapted for Short Messaging.

19. The improvement of Claim 15 wherein said means for monitoring is operative for monitoring a telephone number dialed by the user to determine whether the telephone call should be placed directly or instead the call should be placed using the RTCO platform.

20. The improvement of Claim 15 wherein said control means is operative for comparing the telephone number dialed by the user with a look-up table to determine if the telephone number dialed should be placed directly or should instead be placed using the RTCO platform.

21. The improvement of Claim 20 wherein the look-up table within said control means is updated from time to time using data messages transmitted to the mobile telephone.

22. In a mobile telephone of the type for use with a telephony network and having an internal data messaging device and a keypad for dialing a telephone number, **the improvement therein comprising** that control means are provided for monitoring the dialing of a telephone number by a user of the mobile telephone and further that the internal data messaging device is operative for communicating a message to a data messaging network for relaying the message to an RTCO platform to complete the call using the RTCO platform without requiring that the user dial any additional numbers, the control means being operative for determining whether to place the call directly on to place the call using the RTCO based on the relative costs of each.

ABSTRACT OF THE DISCLOSURE

A method and mobile telephone apparatus for placing a long distance call, the mobile telephone of the type having a data messaging device included therein for communicating with a data network and using a Remote Telephone Call Origination (RTCO) to avoid relatively high charges in one locale and to incur lower charges in a second, lower-cost locale. The method and telephone apparatus place calls by:

- (a) capturing a telephone number dialed by a user of the mobile telephone;
- (b) transmitting a data message to the data network using the data message device, the data message including the dialed telephone number and identifying the mobile telephone number;
- (c) relaying the message from the data network to the RTCO platform;
- (d) placing a first call from the callback platform to the mobile telephone; and
- (e) placing a second call from the callback platform to the long distance telephone number dialed in a manner to connect the first and second calls to each other.

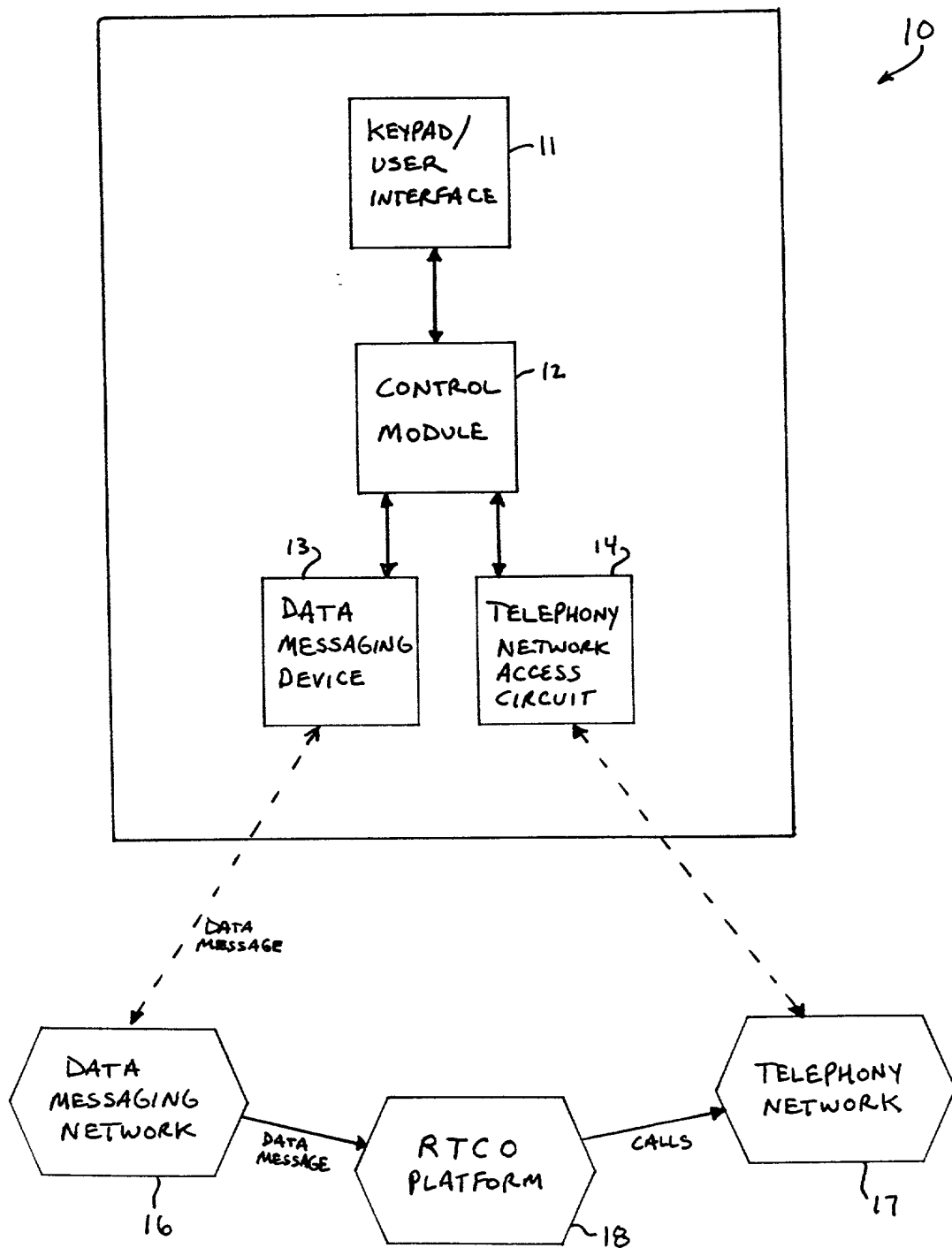


FIG 1

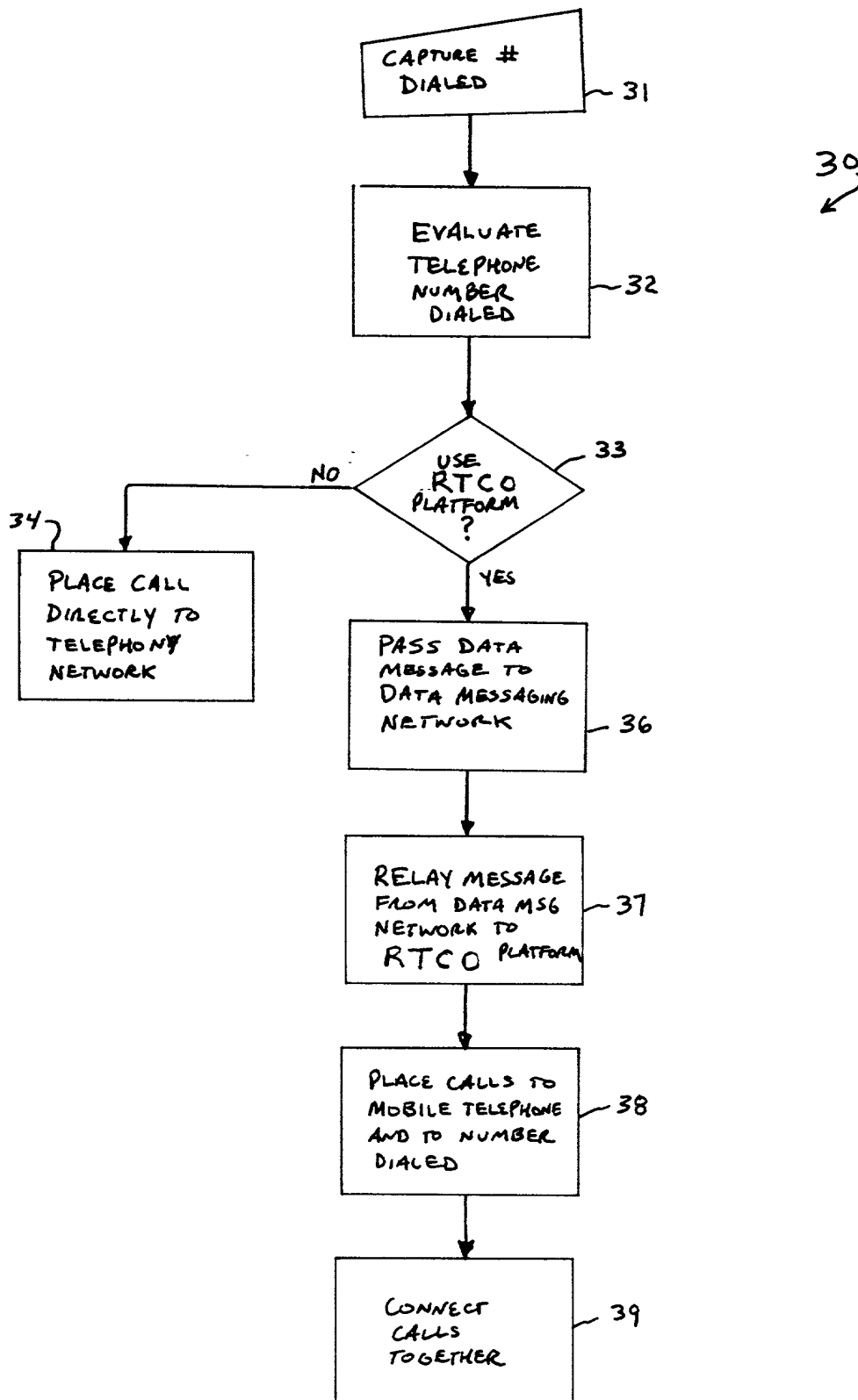
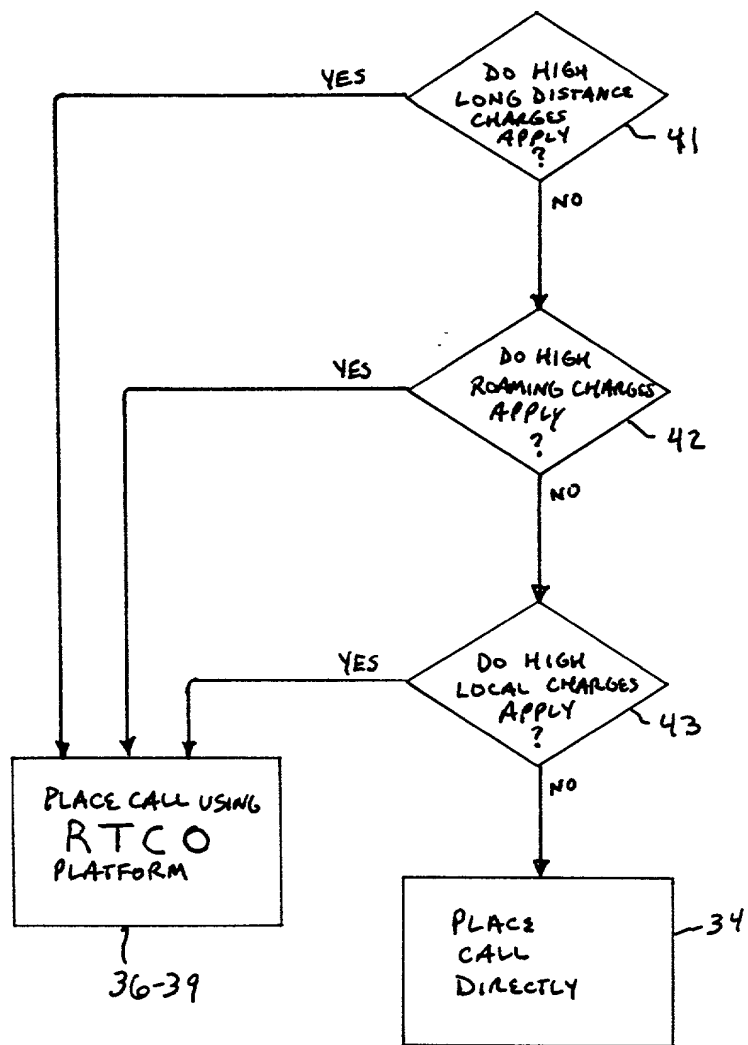


FIG 2



32,33
↙

FIG 3

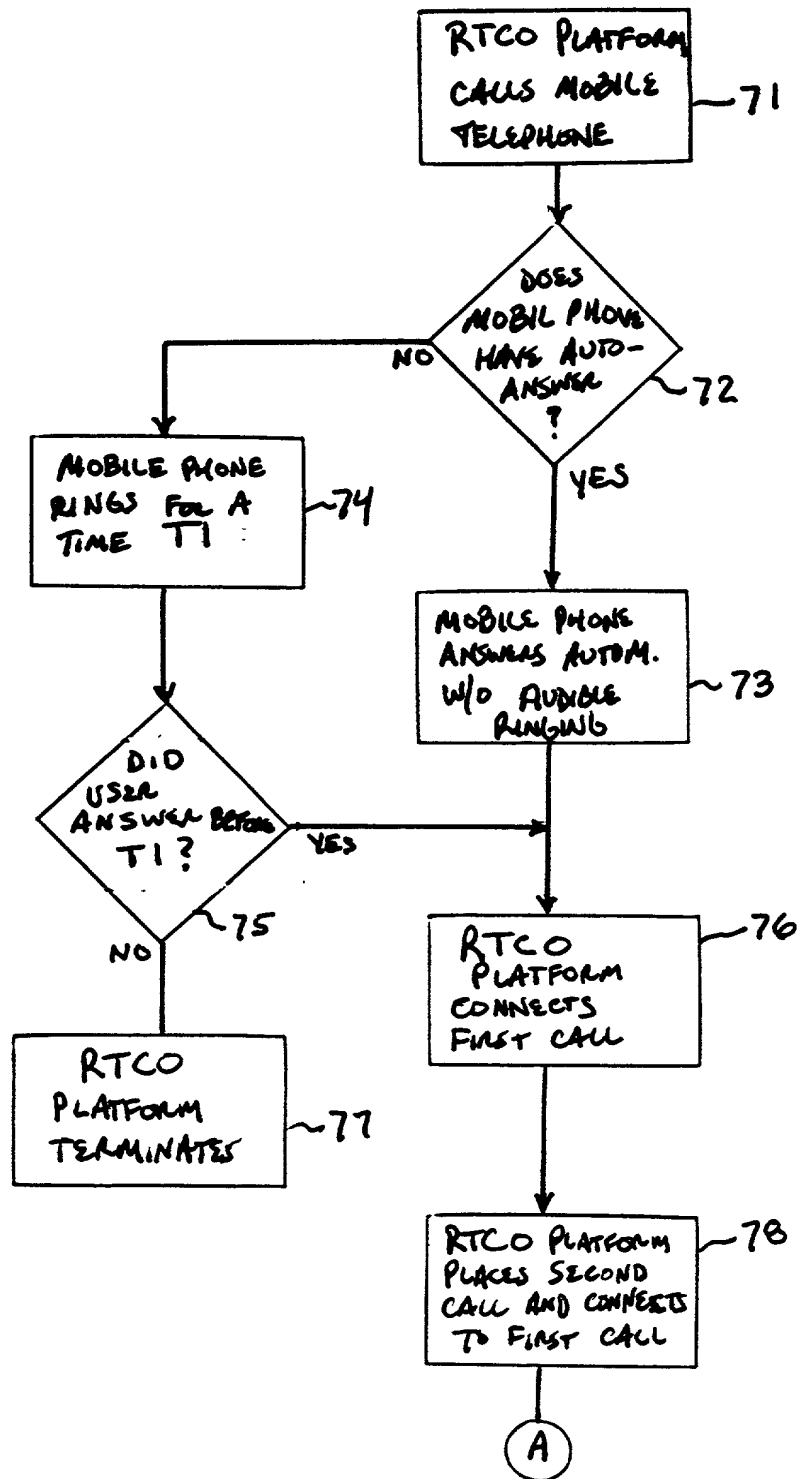


FIG 4A

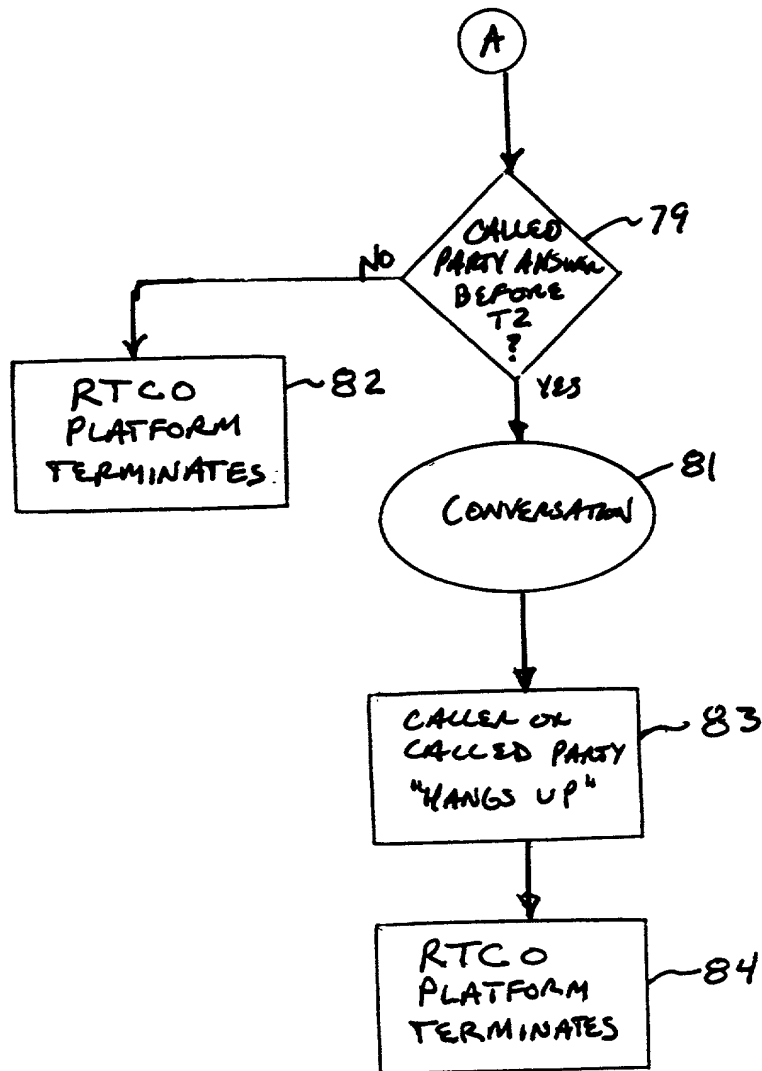


FIG 4B

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**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION**
(37 CFR 1.63)

☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	8L05.1-011
First Named Inventor	LASTER, Maurice S.
COMPLETE IF KNOWN	
Application Number	
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD AND APPARATUS FOR REMOTE TELEPHONE CALL ORIGINATION

the specification of which (Title of the Invention)

☒ is attached hereto
OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International

Application Number and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 356(b) of any foreign application(s) for patent or inventor's certificate, or 356(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below

Application Number(s)	Filing Date (MM/DD/YYYY)	
60/100,898	09/23/1998	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

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U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

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Arthur A. Gardner	33,887		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number OR ☒ Correspondence address below

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Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname
Maurice Scott	LASTER

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Country	US				

☐ Additional inventors are being named on the supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto